

## 1 Description

The CT04 is an overmolded, mini dry reed switch – the smallest molded reed switch option in the market. It is a single-pole, single-throw (SPST) type, having normally open ruthenium contacts.

The sensor is a double-ended type and may be actuated with an electromagnet, a permanent magnet, or a combination of both.

The device is designed for SMD mounting and is available in Gull Wing or J-bend lead configurations.

### Device Packages



## 2 Features

- ▶ High reliability, hermetically sealed contacts for long life - tested up to 1 Billion Operations
- ▶ Ideal for SMD pick and place
- ▶ Tape and reel packaging
- ▶ Rugged encapsulation
- ▶ UL File #E67117 - Contact factory for details
- ▶ RoHS Compliant

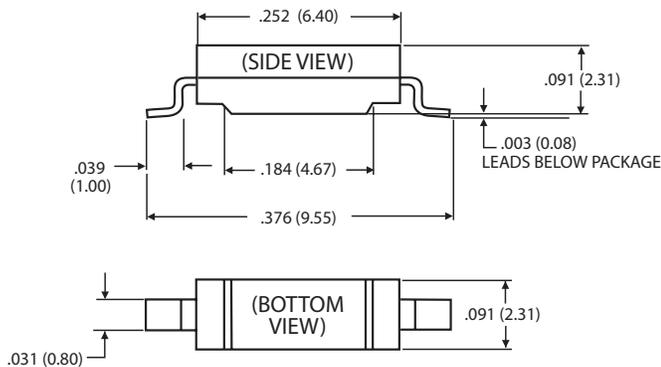
## 3 Applications

- ▶ Proximity Sensing
- ▶ Medical Applications
- ▶ Hearing Aids
- ▶ Pulse Counter

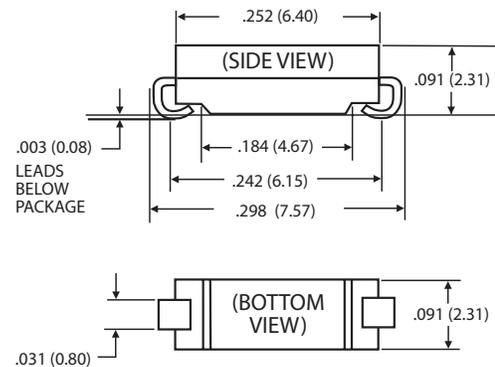
## 4 Dimensions

In Inches (Millimeters)

### 4.1 Gull Wing



### 4.2 J-Lead



## 5 Ordering Information

<b>CT04-3050-YY</b>	
<b>Series</b>	<b>Lead Configuration Subset:</b>
CT04	<b>G1</b> for Gull Wing Version <b>J1</b> for J-Lead Version
<b>AT Ranges</b> (measured after mold & lead form)	
30-50	

## 6 Specifications for CT04

### 6.1 Operating / Environmental Ratings for CT04-3050-YY

Parameters	Units	Min	Typ	Max
Operating Range <sup>1,2</sup>	AT	30		50
Release Range <sup>1,2</sup>	AT	5		49
Storage Temperature	°C	-40		125
Operating Temperature	°C	-40		125
Vibration Resistance	G		10	
Shock Resistance	G		100	

**Notes:**

1. AT values measured using a Philips 10JK coil. 4AT ~ 1mT = 10G (Applicable only for Coto Technology AT values.)
2. Consult factory for custom AT ranges.

### 6.2 Electrical Characteristics for CT04-3050-YY

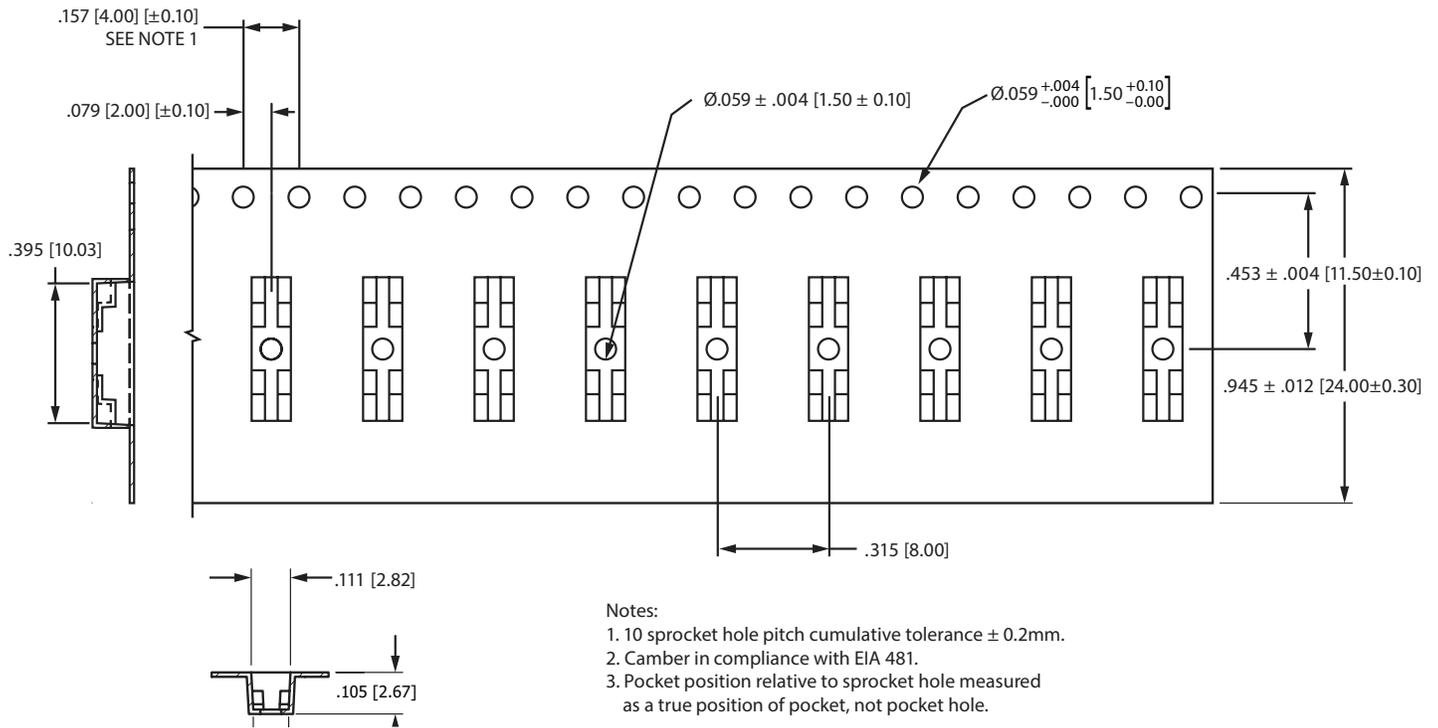
Parameters	Units	Min	Typ	Max
Switching Power	W			1
Switching Voltage DC or Peak AC	V			30
Switching Current DC or Peak AC	A			0.1
Carry Current DC or Peak AC	A			0.5
Breakdown Voltage	V	100		
Life Expectancy @ 1 V, 10 mA	10 <sup>6</sup> Ops.		1000	
Static Contact Resistance	mΩ			250
Insulation Resistance	Ω	10 <sup>9</sup>		

**Notes:**

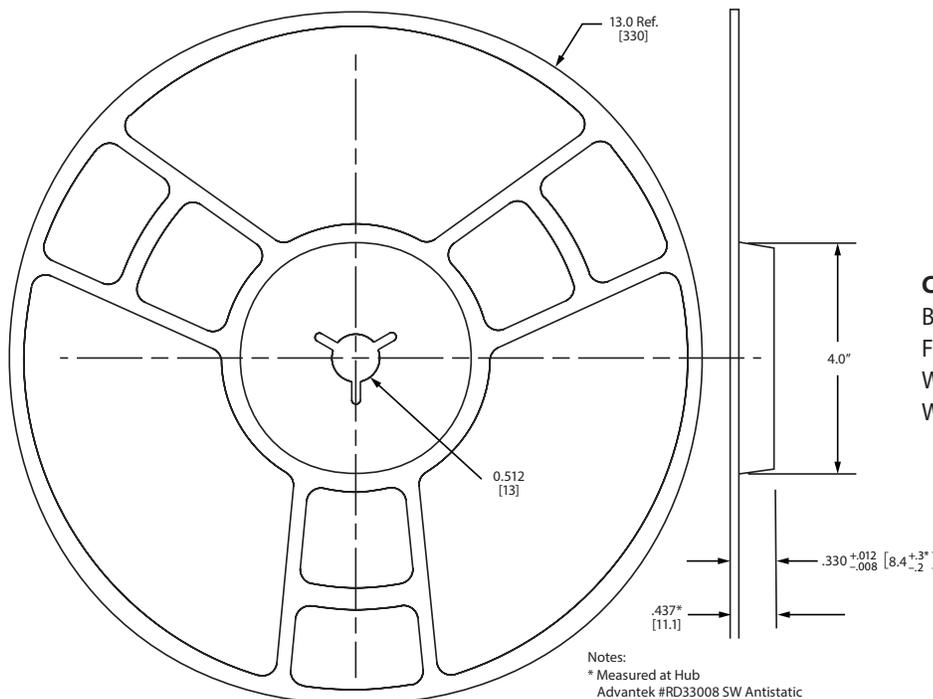
1. Consult factory for life expectancy at other switching loads.

## 7 CT04 Reel & Carrier Tape Packaging

### 7.1 CT04 Carrier Tape



### 7.2 CT04-XXXX-G1 and CT04-XXXX-J1 Reel



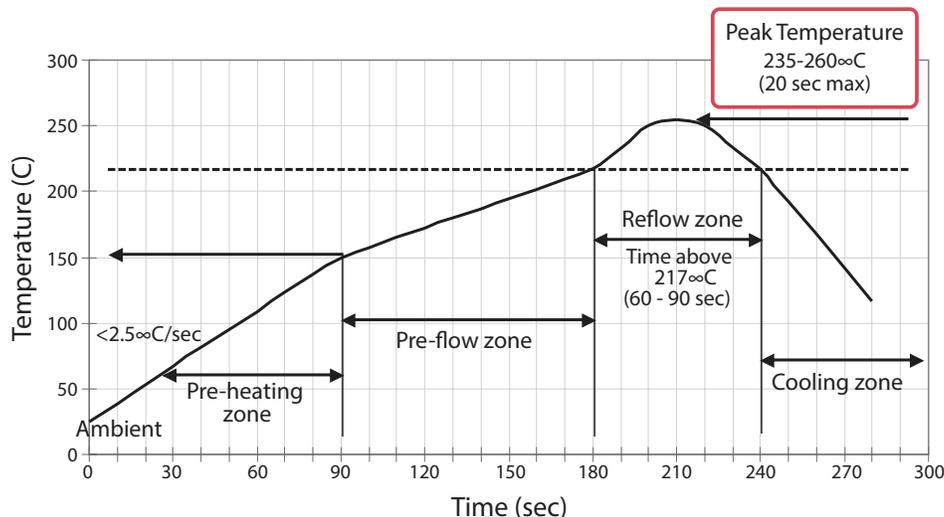
#### CT04 Packaging

Box Dimensions - 14x14x6 inches  
 Fits 1 to 3 reels = 2000 to 6000 pcs  
 Weight for 2000 pcs: 1.20 kilos  
 Weight for 6000 pcs: 2.90 kilos

## 8 Switch Processing Notes

### 8.1 Recommended Reflow Profile SAC Alloy

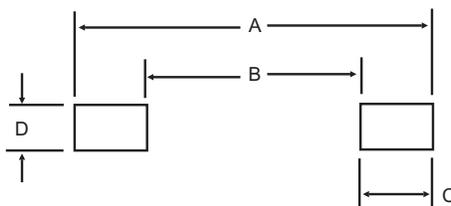
We recommend that the max switch temperature during the solder reflow process does not exceed 260°C. Temperature and time more than the recommended levels may result in damage to the switch. Recommended solder profile for SAC alloys as below.



### 8.2 Recommended Pad Layouts for SMD Reed Switches

Model	Lead Type	Fig. #	Dim. A	Dim. B	Dim. C	Dim. D
CT04	G1	1	.424/10.76	.242/6.14	.091/2.31	.057/1.45
CT04	J1	1	.330/8.38	.168/4.27	.081/2.06	.057/1.45

(Dimensions in Inches/Millimeters)



### 8.3 Cleaning

CT04 is designed and manufactured to provide an adequate seal from external conditions. However, caution must be taken during the cleaning process not to expose the switches to conditions that will allow moisture to permeate into the package. Caution should be taken with dwell time between reflow and cleaning, high pressure spraying, and time in cleaning solvent/aqueous solutions, as these cleaning process parameters can contribute to moisture permeation. Board level bake out may be required after wash to remove moisture that has been introduced during cleaning operations.

### 8.4 Switch Storage

Switch parametric specifications are specified at 25°C and 40% RH. Reduced switch performance may result if storage or use environments significantly exceed these conditions. If high insulation resistance is required, Coto Technology recommends that switch storage, processing, and use environments are adequate to achieve the desired results. Switches should be stored in similar environmental conditions as other high-reliability active and passive electronic components. Proper storage of switches is also important to maintain solderability over an extended period of time.

## 8 Switch Processing Notes

### 8.5 Handling

Switches should be handled with care. Dropping or mishandling switches may result in damage that can contribute to a direct failure or, even worse, a latent field failure. If switches are dropped, Coto Technology recommends that they should be discarded.

Coto Technology does not recommend use of ultrasonic activated equipment with switches. The use of ultrasonic equipment may change the characteristics of the switch and can contribute to failure.

For more **technical and application information**,  
please refer to the following QR code:



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